


Department of Planning and Zoning

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Elsie Tillotson, Department Secretary



TO: Development Review Board
FROM: Scott Gustin 
DATE: October 4, 2011
RE: 12-0293CA/CU; 7 Driftwood Lane

Note: These are staff comments only; decisions on projects are made by the Development Review Board, which may approve, deny, table or modify any project. THE APPLICANT OR REPRESENTATIVE MUST ATTEND THE MEETING.

Zone: WRL Ward: 4

Owner/Applicant: James Mullowney

Request: Replace existing rip rap with new seawall.

Applicable Regulations:

Article 4 (Maps & Districts), Article 5 (Citywide General Regulations), Article 6 (Development Criteria & Guidelines)

Background Information:

The applicant is seeking approval to construct a seawall to repair shoreline damage associated with flooding this past spring and to prevent future damage. Two alternatives are included: a stone seawall or a concrete seawall. The proposed work is largely the same for the two alternatives; only the wall material is significantly different. Associated grading and slope stabilization work is also proposed. As the seawall is located partially below the 102' elevation, it is subject to review under the flood hazard area regulations in addition to dimensional and design review standards. As required, the project is subject to review and approval by the State National Floodplain Insurance Program Coordinator at VT DEC. A copy of the application was provided to the Coordinator on September 16, but no response has yet been received. The Coordinator has 30 days to respond. Any comments received within the 30 day period will be incorporated into this approval.

Previous zoning actions for this property are noted below.

- 8/11/88, Approval of addition on south side of house

Recommendation: Consent approval as per, and subject to, the following findings and conditions:

I. Findings

Article 4: Maps & Districts

Sec. 4.4.5, Residential Districts:

(a) Purpose

(2) Waterfront Residential Low Density (WRL)

The subject property is located in the WRL zone. This zone is intended primarily for low density residential development in the form of single detached dwellings and duplexes with consideration given to design review. The single family home use will remain unchanged. **(Affirmative finding)**

(b) Dimensional Standards & Density

Lot coverage will increase to 23.9% if the seawall is constructed of stone blocks. If constructed of concrete, lot coverage remains unchanged because it is less than 18" wide. Either scenario is compliant. The seawall is located within the 75' lakeshore setback; however, its degree of encroachment will not exceed that of nearby seawalls. Furthermore, walls (i.e. retaining walls and seawalls) are specifically allowed to encroach into setbacks per Sec. 5.2.5, *Setbacks*, (b) *Exceptions to Yard Setback Requirements*. The seawall is well under the maximum allowable height of 35'. **(Affirmative finding)**

(c) Permitted & Conditional Uses

The seawall is accessory to the permitted single family home. **(Affirmative finding)**

(d) District Specific Regulations

1. Setbacks

See Sec. 4.4.5 (b) above for setback encroachment.

2. Height

Not applicable.

3. Lot Coverage

Not applicable.

4. Accessory Residential Structures and Uses

Not applicable.

5. Residential Density

Not applicable.

6. Uses

Not applicable.

7. Residential Development Bonuses

Not applicable.

Sec. 4.5.4, Natural Resource Protection Overlay District:

(a) District Specific Regulations: Special Flood Hazard Area

(7) Special Review Criteria

A. The danger to life and property...

The seawall will be placed within the lakeshore flood hazard area. Lakeshore flood dynamics are unlike those of river flood dynamics. The water does not flow at perceptible speeds and is not subject to constriction. Placement of the seawall within the lakeshore flood zone will have no impact on flood heights or velocities. **(Affirmative finding)**

B. The danger that material may be swept onto other lands...

The new seawall will be constructed of quarried stone blocks or poured concrete and will be anchored into the ground along its base. There is little danger that the structure will be swept away by flood waters. **(Affirmative finding)**

C. The proposed water supply and sanitation systems...

Not applicable.

D. The susceptibility of the proposed facility and its contents to flood damage...

The seawall is a protective measure against flood damage to the property. The potential for flooding damage to the seawall itself is minimal. **(Affirmative finding)**

E. The importance of the services provided...

The seawall is of little importance to the Burlington community; however, it will provide substantial protection to the private property that it will be located on. **(Affirmative finding)**

F. The availability of alternative locations...

The point of the seawall is to protect the property from flood damage. Its placement within the flood zone is key to this function. It's location within the floodplain is acceptable. **(Affirmative finding)**

G. The compatibility of the proposed use with existing development...

Seawalls are commonplace along Burlington's lakeshore. **(Affirmative finding)**

H. The relationship of the proposed use to the Municipal Development Plan...

The Municipal Development Plan does not address seawalls. It does speak to the development pattern of single family homes and duplexes in the RL and WRL zones. The subject property contains a single family home. Insofar as homes along the lakeshore commonly have seawalls, the proposal can be found in compliance with the MDP. **(Affirmative finding)**

I. The safety of access to the property...

The new seawall will have no effect on the safety of access to the property during times of flood. **(Affirmative finding)**

J. The expected heights, velocity, duration, rate of rise...

The maximum regulatory flood elevation along the lakeshore is 102' above sea level. The seawall will have no impact on flood heights, velocity, duration, rate of rise, or sediment transport. **(Affirmative finding)**

K. Conformance with all other applicable requirements...

See Articles 4, 5, and 6 of these findings.

Article 5: Citywide General Regulations

Sec. 5.2.3, Lot Coverage Requirements

See Sec. 4.4.5 (b) above.

Sec. 5.2.4, Buildable Area Calculation

Not applicable.

Sec. 5.2.5, Setbacks

See Sec. 4.4.5 (b) above.

Sec. 5.2.6, Building Height Limits

See Sec. 4.4.5 (b) above.

Sec. 5.2.7, Density and Intensity of Development Calculations

See Sec. 4.4.5 (b) above.

Sec. 5.5.1, Nuisance Regulations

Nothing in the proposal appears to result in creating a nuisance under this criterion. **(Affirmative finding)**

Sec. 5.5.3, Stormwater and Erosion Control

As more than 400 sf of earth disturbance is proposed, a “small project erosion control” plan is required. Such a plan has been submitted to the Stormwater Administrator and is pending approval. The approved plan and associated conditions will be incorporated into this permit approval. **(Affirmative finding as conditioned)**

Article 6: Development Review Standards

Part 1, Land Division Design Standards

Not applicable.

Part 2, Site Plan Design Standards

Sec. 6.2.2, Review Standards

(a) Protection of important natural features

The subject property is located along the Lake Champlain shoreline. The shoreline is an identified significant natural area. Much of the property is affected by the Natural Resource Protection Overlay District, specifically the riparian and littoral conservation zone, which stretches inland 250’ from the 100’ lakeshore elevation. As required, an erosion control plan has been provided for review by the Stormwater Administrator. Approval is pending. In order to address slope failure, an area of existing trees and brush will be removed from the slope, and a blanket of shot rock will be installed. The shot rock will re-vegetate naturally over time. The Conservation Board will review this project October 3, 2011. Recommendations of that Board will be incorporated into this Development Review Board decision. **(Affirmative finding as conditioned)**

(b) Topographical alterations

A fairly steep bank separates the lake from the house site and lawn areas. Some modification of this slope is proposed, and shot rock will be installed to stabilize it. The end result is a moderately changed slope with a seawall at its base. The proposed topographical alterations are modest and acceptable. **(Affirmative finding)**

(c) Protection of important public views

Not applicable.

(d) Protection of important cultural resources

Not applicable.

(e) Supporting the use of alternative energy
Not applicable.

(f) Brownfield sites
Not applicable.

(g) Provide for nature's events
See Sec. 5.5.3.

(h) Building location and orientation
Not applicable.

(i) Vehicular access
Not applicable.

(j) Pedestrian access
Not applicable.

(k) Accessibility for the handicapped
Not applicable.

(l) Parking and circulation
Not applicable.

(m) Landscaping and fences
Some clearing of vegetation is proposed; however, most of it is brush. Similar vegetation will reestablish itself amongst the shot rock. If the seawall is to be constructed of concrete, vegetative screening will be required. Similar applications have incorporated vine plantings to screen the wall. Similar screening in this case would be appropriate. If stone blocks are used, no screening is required. As the seawall is greater than 3 feet tall, review and approval by the City Engineer is required. This review will take place via the associated building permit application. While no fencing is proposed, the existing stairs will be reconstructed and extended to the beach. No details on the extension have been provided and are needed. **(Affirmative finding as conditioned)**

(n) Public plazas and open space
Not applicable.

(o) Outdoor lighting
Not applicable.

(p) Integrate infrastructure into the design
Not applicable.

Part 3, Architectural Design Standards
Sec. 6.3.2, Review Standards
Not applicable.

II. Conditions of Approval

1. **Prior to release of the zoning permit**, revised plans depicting proposed stairway details shall be submitted, subject to staff review and approval.
2. **Prior to release of the zoning permit**, the applicant shall obtain written approval of the erosion control plan from the Stormwater Administrator.
3. **Prior to release of the zoning permit**, the applicant shall choose either concrete or stone block for the seawall. If concrete is chosen, vegetative screening must be noted on the plans, subject to staff review and approval.
4. This approval incorporates timely comments and stipulations issued by the State National Floodplain Insurance Program Coordinator at VT DEC as related to this project.
5. The Applicant/Property Owner is responsible for obtaining all necessary Zoning Permits and Building Permits through the Department of Public Works as well as other permit(s) as may be required, and shall meet all energy efficiency codes as required.
6. Standard permit conditions 1-18.



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DRIFTWOOD



MURPHY

5 DRIFTWOOD



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SEP 06 2011

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PLANNING & ZONING

LEGEND

- | | |
|---|---------------------------|
|  | EXISTING CONTOUR |
|  | PROPOSED CONTOUR |
|  | APPROXIMATE PROPERTY LINE |
|  | APPROXIMATE SETBACK LINE |
|  | IRON PIN FOUND |
|  | CONCRETE MONUMENT FOUND |
|  | OVERHEAD ELECTRIC |
|  | UNDERGROUND ELECTRIC |
|  | STORM DRAINAGE LINE |
|  | POWER POLE |
|  | GUY WIRE |
|  | CATCH BASIN |
|  | DECIDUOUS TREE |
|  | CONIFEROUS TREE |
|  | EDGE OF BRUSH/WOODS |
|  | FENCE |
|  | DRAINAGE SWALE |

N/F
SMITH

LAKE CHAMPLAIN

GENERAL NOTES

1. Utilities shown do not purport to constitute or represent all utilities located upon or adjacent to the proposed premises. Existing utility locations are approximate only. The Contractor shall field verify all utility conflicts. All discrepancies shall be reported to the Engineer. The Contractor shall contact Dig Safe (888-334-7233) prior to any construction.
2. All existing utilities not incorporated into the final design shall be removed or abandoned as indicated on the plans or directed by the Engineer.
3. The Contractor shall maintain as-built plans (with ties) for all underground utilities. Those plans shall be submitted to the Owner at the completion of the project.
4. The Contractor shall repair/restore all disturbed areas (on or off the site) as a direct or indirect result of the construction.
5. All grassed areas shall be maintained until full vegetation is established.
6. Maintain all trees outside of construction limits.
7. The Contractor shall be responsible for all work necessary for complete and operable facilities and utilities.
8. The Contractor shall submit shop drawings for all items and materials incorporated into the site work. Work shall not begin on any item until shop drawing approval is granted.
9. In addition to the requirements set in these plans and specifications, the Contractor shall complete the work in accordance with all permit conditions and any local Public Works Standards.
10. The tolerance for finish grades for all pavement, walkways and lawn areas shall be 0.1 feet.
11. Any dewatering necessary for the completion of the sitework shall be considered as part of the contract and shall be the Contractor's responsibility.
12. The Contractor shall coordinate all work within Town Road R.O.W. with Town authorities.
13. Existing pavement and tree stumps to be removed shall be disposed of at an approved off-site location.
14. If there are any conflicts or inconsistencies with the plans or specifications, the Contractor shall contact the Engineer for verification before work continues on the item in question.
15. Property line information is approximate and based on the City of Burlington Tax Maps.
16. This plan is not a boundary survey and is not intended to be used as one.

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
802-864-2323 FAX: 802-864-2271 web: www.cea-vt.com

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DRAWN
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CHECKED
SAV
APPROVED
SAV

OWNER:

**JAMES
MULLOWNEY**
7 DRIFTWOOD
BURLINGTON
VERMONT

PROJECT:

PROPOSED
SLOPE
STABILIZATION

7 DRIFTWOOD LANE
BURLINGTON
VERMONT

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SEP 06 2011

DEPARTMENT OF
PLANNING & ZONING

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EXISTING CONDITIONS SITE PLAN

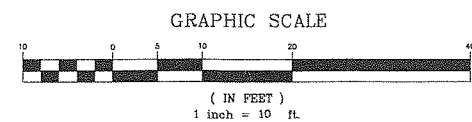
DATE
JULY, 2011

SCALE
1" = 10'

PROJ. NO.
11160

DRAWING NUMBER

C1.0



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LEGEND

- EXISTING CONTOUR
- 336 PROPOSED CONTOUR
- APPROXIMATE PROPERTY LINE
- APPROXIMATE SETBACK LINE
- IRON PIN FOUND
- CONCRETE MONUMENT FOUND
- OE OVERHEAD ELECTRIC
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- POWER POLE
- GUY WIRE
- CATCH BASIN
- DECIDUOUS TREE
- CONIFEROUS TREE
- EDGE OF BRUSH/WOODS
- FENCE
- DRAINAGE SWALE

N/F SMITH

*EROSION CONTROL MEASURES TO BE INSTALLED AS DETAILED - SEE SHEET C4 AND IN ACCORDANCE WITH THE "LOW RISK SITE HANDBOOK FOR EROSION PREVENTION AND SEDIMENT CONTROL"

TEMPORARY PROJECT BENCHMARK SPIKE IN 12" WILLOW TREE ELEVATION = 100.9'

LAKE CHAMPLAIN

EXISTING VEGETATION AND UNSTABLE MATERIAL TO BE REMOVED ON EMBANKMENT PRIOR TO PLACEMENT OF NEW MATERIAL

PROPOSED LARGE STONE RETAINING WALL (TOW = ±108.0') TO BE KEYED INTO EXISTING MATERIAL

PROVIDE ±6" OF TOPSOIL, EROSION CONTROL MATTING AND SEED OVER NEW RIP-RAP.

PROPOSED SHOT ROCK BANK STABILIZATION BEHIND PROPOSED STONE RETAINING WALL TO EXISTING GRADE. MATERIAL TO BE 12" MINUS (1.5:1 MAX. SLOPE ABOVE WALL) (TYPICAL)

CONCRETE SUPPORTS FOR STONE AND DECK SYSTEM (TYP.)

PLACE SHOT ROCK / EXTEND STABILIZATION AS NECESSARY IN ALL ERODED AREAS BEYOND LIMITS SHOWN OR AS NECESSARY

EXISTING WOOD DECK TO BE REMOVED TO ALLOW FOR NEW WALL INSTALLATION (TO BE RECONSTRUCTED AND EXTENDED TO PROVIDE ACCESS TO BEACH)

PROVIDE ±6" OF TOPSOIL, EROSION CONTROL MATTING AND SEED OVER NEW RIP-RAP.

EXISTING DRAIN LINES TO BE EXTENDED TO FACE OF WALL - COORD. WITH ENGINEER (TYP. FOR 3)

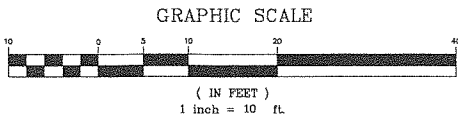
EX. CONC. MAT WITH CONC. REPAIR

EXTEND NEW WALL TO MATCH EXIST. WALL

N/F MURPHY

Lot Size: 30,500 s.f.
Existing Building: 2,951 s.f.
Parking/Drives/Walks: 3,985 s.f.
Total Lot Coverage: 6,936 s.f.
22.7%

→ +360 sf (s.f. stone)
→ 23.9%



CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
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JDL
CHECKED
SAV
APPROVED
SAV

OWNER:

JAMES MULLOWNEY
7 DRIFTWOOD
BURLINGTON
VERMONT

PROJECT:

PROPOSED
SLOPE
STABILIZATION
7 DRIFTWOOD LANE
BURLINGTON
VERMONT

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PLANNING & ZONING

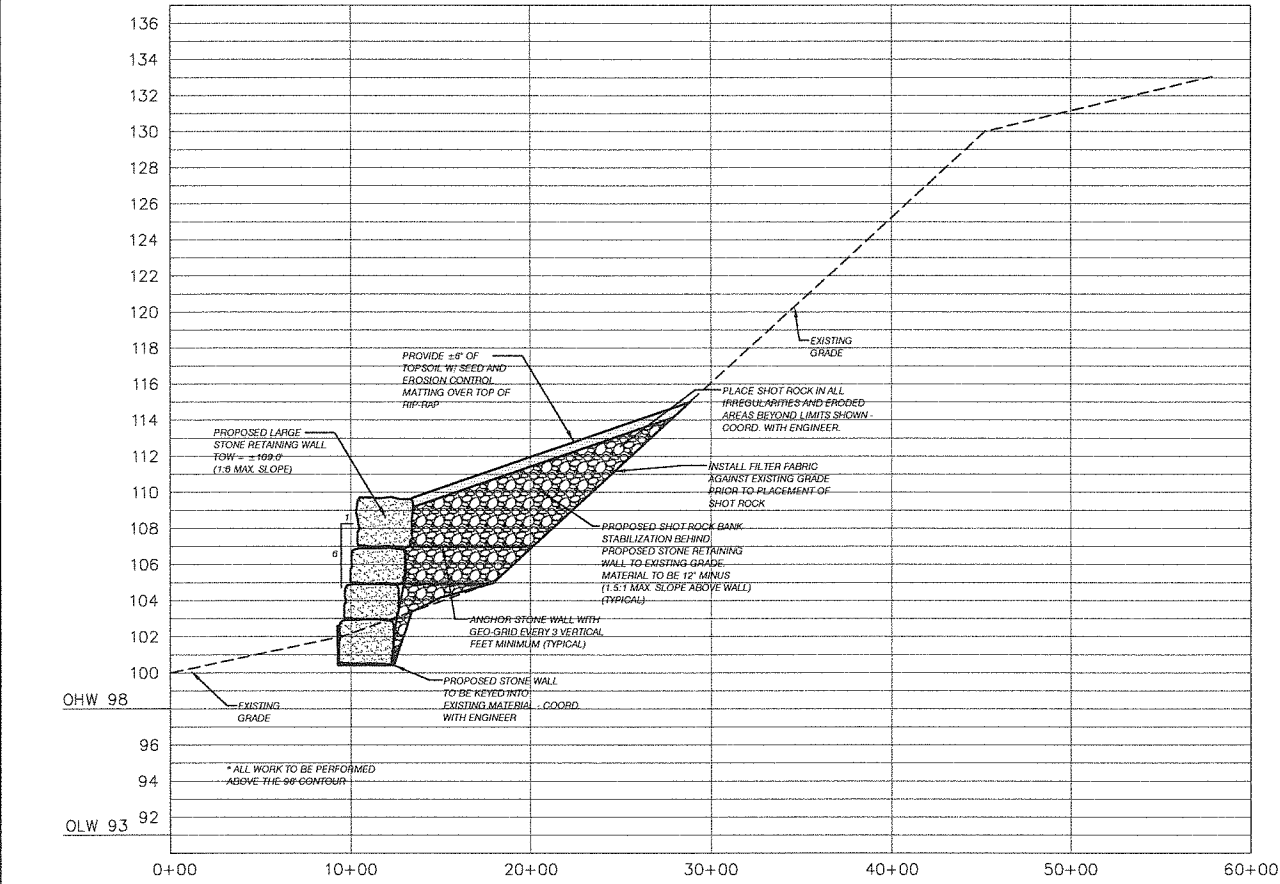
DATE	CHECKED	REVISION

PROPOSED
SITE PLAN

DATE
JULY, 2011
SCALE
1" = 10'
PROJ. NO.
11160

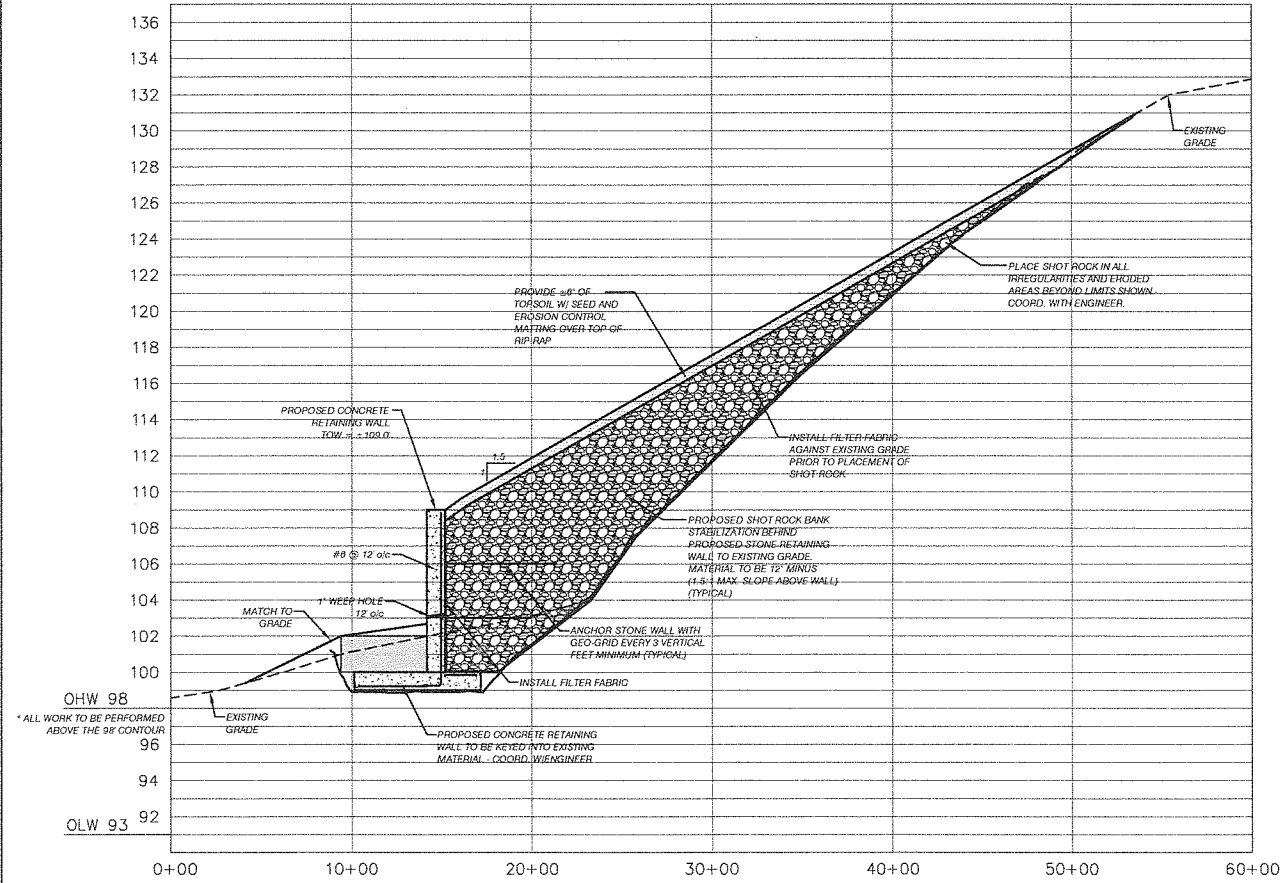
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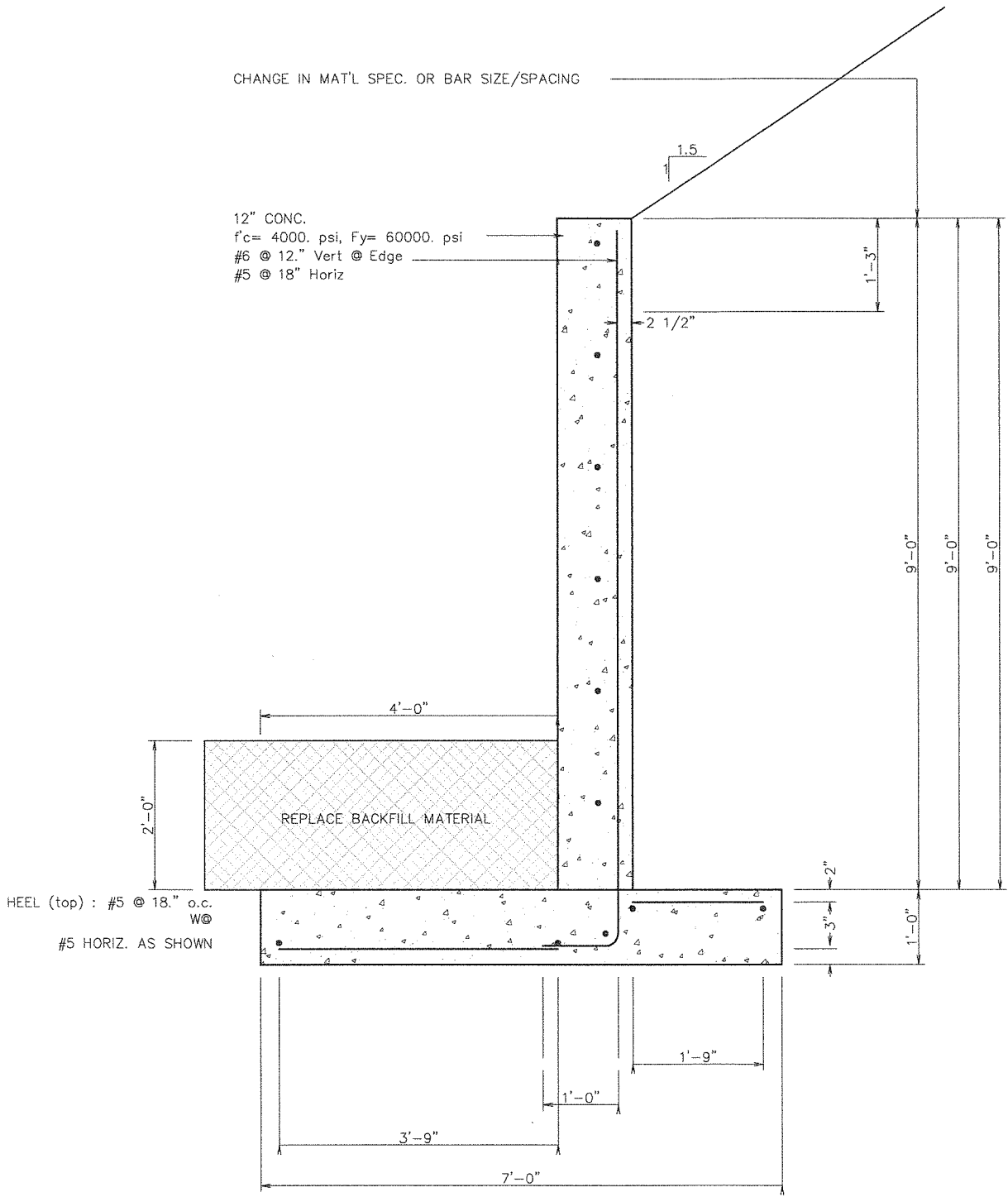
SECTION A-A

1" = 5'



SECTION B-B

1" = 5'



OPTIONAL RETAINING WALL

Scale: 3/4" = 1'-0"

SITE ENGINEER:



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VERMONT

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7 DRIFTWOOD LANE
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DEPARTMENT OF
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DATE	CHECKED	REVISION

SECTIONS
AND
DETAILS

DATE
JULY, 2011
SCALE
AS NOTED
PROJ. NO.
11160

DRAWING NUMBER
C3.0

GENERAL EROSION CONTROL REQUIREMENTS

DESCRIPTION

EARTH DISTURBANCE OCCURRING DURING THIS PROJECT IS ASSOCIATED WITH MOBILIZATION OF CONSTRUCTION EQUIPMENT, USE OF EQUIPMENT WITHIN PROJECT AREA, INSTALLATION OF PROPOSED SHORELINE RETAINING WALL, CONSTRUCTION OF NEW ACCESS RAMP AND THE GENERAL STABILIZATION OF THE EXISTING SHORELINE.

AREA OF DISTURBANCE

NEW EARTH DISTURBANCE IS TO BE LIMITED TO THE AREAS AS DEPICTED ON THE PROPOSED SITE PLAN ASSOCIATED WITH THE SHORELINE STABILIZATION IMPROVEMENTS.

EXPECTED SOIL DISTURBANCE THIS PHASE: VARIES

THE PROJECT SHALL HAVE A MAXIMUM OF 14 CONSECUTIVE DAYS OF DISTURBED EARTH IN ANY LOCATION BEFORE TEMPORARY OR PERMANENT STABILIZATION IS IMPLEMENTED.

DISTURBED AREAS ASSOCIATED WITH EACH PHASE SHALL RECEIVE TEMPORARY OR PERMANENT STABILIZATION PRIOR TO BEGINNING THE NEXT PHASE.

BEST MANAGEMENT PRACTICES

TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT DISCHARGE, THE FOLLOWING EROSION PREVENTION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AND MAINTAINED THROUGHOUT SITE WORK. EMPHASIS WILL BE ON MINIMIZING THE TIME SOILS ARE LEFT EXPOSED DURING WORK, AND PROVIDING STABILIZATION PRIOR TO FORECAST PRECIPITATION OR MELT EVENTS.

THE STABILIZED CONSTRUCTION ENTRANCES MUST BE MAINTAINED THROUGHOUT ACTIVE SITE WORK TO PROTECT AGAINST SEDIMENT MOVEMENT BY VEHICLE TRACKING.

SILT FENCE IS TO BE INSTALLED PRIOR TO NEW EARTH DISTURBANCE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

INSPECTIONS

THE OWNER OR OPERATOR SHALL ENSURE THAT ALL EROSION AND SEDIMENT CONTROL PRACTICES IDENTIFIED IN THESE PLANS ARE MAINTAINED IN EFFECTIVE OPERATING CONDITION AT ALL TIMES. INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE STATE OF VERMONT LOW RISK CONSTRUCTION HANDBOOK.

INSPECTIONS BY A QUALIFIED INSPECTOR ARE REQUIRED AT LEAST ONCE EVERY 7 CALENDAR DAYS DURING PERIODS OF ACTIVE CONSTRUCTION.

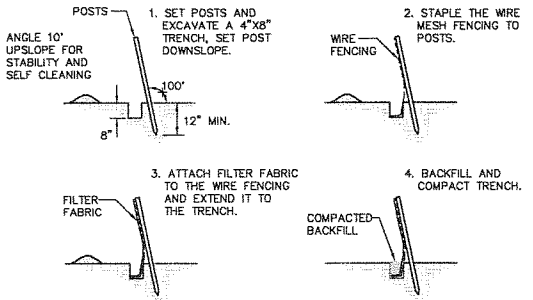
INSPECTION SHALL INCLUDE ALL AREAS OF THE SITE DISTURBED BY CONSTRUCTION ACTIVITY, ALL DISCHARGE LOCATIONS, AREAS OF TEMPORARY STABILIZATION, AND ALL EROSION AND SEDIMENT CONTROL MEASURES.

EROSION CONTROL REQUIREMENTS-WINTER PERIOD

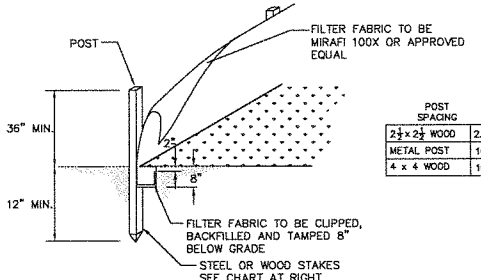
FOR WORK OCCURRING DURING THE WINTER PERIOD (OCT. 15 - MAY 1), EROSION CONTROL MEASURES INCLUDING CONSTRUCTION ENTRANCES, CONSTRUCTION LIMITS, STABILIZED LAYDOWN AREAS, AND SILT FENCE ARE TO BE INSTALLED PRIOR TO THE GROUND FREEZING AND MAINTAINED UNTIL FINAL STABILIZATION IS ACHIEVED.

STABILIZED ENTRANCES AND ACCESS POINTS SHOULD BE ENLARGED TO PROVIDE FOR SNOW STOCKPILING. A MINIMUM 25' BUFFER SHALL BE MAINTAINED FROM PERIMETER CONTROLS SUCH AS SILT FENCE AND LIMITS OF DISTURBANCE.

WHERE MULCH IS THE SELECTED STABILIZATION MEASURE, DOUBLE THE STANDARD RATE OF MULCH SHALL BE USED DURING THE WINTER PERIOD. (2 INCHES OF MULCH WITH 80-90% COVER). WHERE MULCH IS SUBJECT TO WIND ACTION, IT SHALL BE SECURED WITH NETTING OR OTHER APPROVED METHOD. SNOW AND ICE SHALL BE REMOVED TO LESS THAN 1" THICKNESS PRIOR TO STABILIZATION.

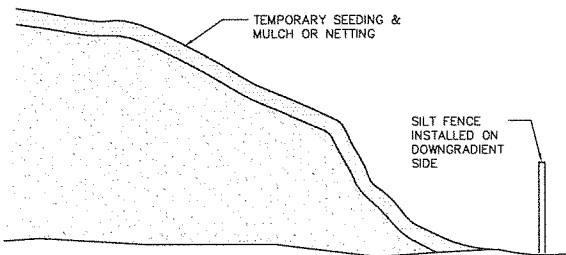


SILT FENCE CONSTRUCTION DETAIL
N.T.S.

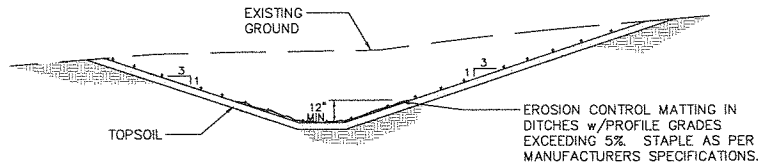


1. INSTALL MIRAFI ENVIROFENCE, OR APPROVED EQUAL OR AS DETAILED HEREIN.
2. INSTALL SILT FENCES AT TOES OF ALL UNPROTECTED SLOPES AND AS PARALLEL TO CONTOURS AS POSSIBLE. THIS INCLUDES ALL FILLED OR UNPROTECTED SLOPES CREATED DURING CONSTRUCTION, NOT NECESSARILY REFLECTED ON THE FINAL PLANS. CURVE THE ENDS OF THE FENCE UP INTO THE SLOPE. REMOVE SEDIMENT WHEN ACCUMULATED TO HALF THE HEIGHT OF THE FENCE. SILT FENCES ARE TO BE MAINTAINED UNTIL SLOPES ARE STABILIZED.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6", FOLDED AND STAPLED.

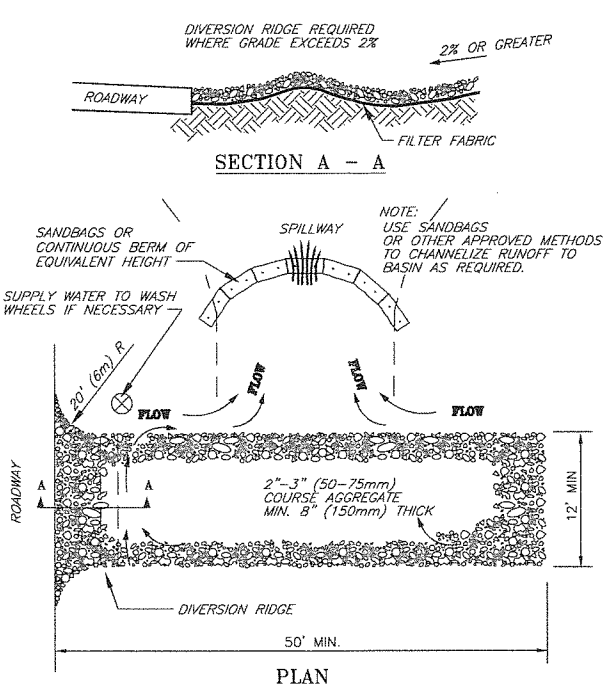
SILT FENCE DETAIL
N.T.S.



TEMPORARY STOCKPILE DETAIL
N.T.S.

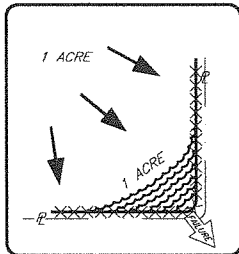


GRASS LINED DITCH
N.T.S.

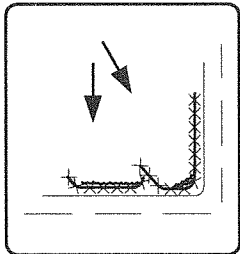


- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

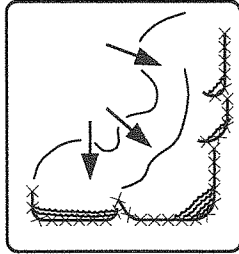
STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



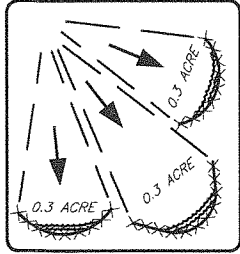
Incorrect - Do Not layout "perimeter control" silt fences along property lines. All sediment laden runoff will concentrate and overwhelm the system.



Correct - Install J-hooks



NOTE: Silt fence shall not be placed in areas of concentrated flows.



Discreet segments of silt fence, installed with J-hooks or 'smiles' will be much more effective.

SILT FENCE PLACEMENT FOR PERIMETER CONTROL
N.T.S.

EROSION CONTROL REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

In addition to the Erosion Control Measures prescribed in the plan set, the Erosion Control measures in the "Low Risk Site Handbook for Erosion Prevention and Sediment Control" will serve as the EPSC plan for this site. The Low Risk site handbook is available from the VT DEC Stormwater Section at: www.anr.state.vt.us/dec/waterq/stormwater/hm/sw_cgp.htm

- B. The work under this section includes but is not limited to providing all labor, equipment and materials for the installation of all required site related erosion control measures. If not otherwise directed on the plans, erosion control shall be in strict conformity with the latest revision of the "Low Risk Site Handbook for Erosion Prevention and Sediment Control" available from the VT DEC Stormwater Section.

1.02 GENERAL NOTES

- A. The discharge of sediment laden water from the project site is prohibited. All discharged water from dewatering operations shall discharge into a temporary sedimentation basin.
- B. Contractor shall install all erosion control measures as depicted on plans and details or as recommended by the Vermont Agency of Natural Resources, or Soil Conservation Service, prior to any construction. Contractor shall also be responsible for inspecting and maintaining all erosion control measures until project is completed.
- C. If soil disturbance will be required later than October 15th or earlier than April 15, the contractor shall be responsible for maintaining compliance with the winter stabilization practices and requirements for winter construction found in the "Low Risk Site Handbook for Erosion Prevention and Sediment Control".
- D. Contractor shall mark the site boundaries to identify the limits of construction. Fence is required on any boundary within 50 ft. of a stream, lake, pond or wetland.
- E. All stockpile material (topsoil, borrow, etc.) shall have silt fence installed around the downgradient portion of the stockpile perimeter. Seed and mulch stockpiled material as soon as possible to prevent soil erosion and sedimentation off site. Locate stockpiles on the uphill side of the disturbed areas, if possible. During windy conditions, stockpiled material shall be covered or watered appropriately to prevent wind erosion.
- F. Slopes greater than 1:3 shall have erosion control netting installed to stabilize the slope and reduce the erosion potential. Install netting over mulched slopes so that all parts are in contact with the soil and mulch. Pin netting with wire staples 3' o.c. to ensure full bonding with soil surface.
- G. Install stone check dams in grass-lined swales 50 feet on center to prevent silt from washing into the drainage system during construction. Check dams shall be removed when vegetation is established.
- H. Control dust through the application of calcium chloride or water. An average application of one pound of calcium chloride per square yard of exposed area should be considered for each treatment. The exact number of applications and amount of dust controller shall be based upon field and weather conditions. It shall be spread in such manner and by such devices that uniform distribution is obtained over the entire area on which it is ordered placed.

PART 2 - PRODUCTS

2.01 EROSION CONTROL NETTING

- A. Jute netting shall consist of undyed and unbleached yarn woven into a uniform open plain weave mesh.

2.02 EROSION CONTROL MATTING

- A. Where required on the plans or where directed by the Engineer, erosion control blankets (matting) shall be North American Green S150 for swales, and S75 for slope stabilization, or approved equal.

2.03 FILTER FABRIC

- A. When filter fabric is required, it shall conform to the requirements of Mirafi 140NS or approved equivalent.

2.05 WATER

- A. All water used shall be clean and free of harmful amounts of oil, salt, acids, alkalies, sugar, organic matter and other substances injurious to the finished product, plant life or the establishment of vegetation.

PART 3 - EXECUTION

3.01 STONE CHECK DAM INSTALLATION

- A. Stone check dams to be constructed and installed as outlined in the Low-Risk Handbook or as instructed by the Engineer. Once vegetation is established and the check dams are no longer needed for erosion control, they shall be removed.

3.02 SILT FENCES

- A. The silt fences shall be constructed in accordance with the construction detail. The fence shall generally be placed 10 feet from the toe of the slope or as shown on the plans. The ends of the fence shall be placed uphill to form a horseshoe shape to trap all runoff.
- B. The silt fences shall be inspected periodically for damage or build-up of sediments. All damaged fences shall be repaired or replaced. Sediment deposits shall be removed from the fence as they build up and be placed in an area where there is no danger of further erosion.

3.03 EROSION MATTING

- A. Erosion matting shall be placed on all grass-lined ditches with profile grades exceeding 5.0% and shall be placed and maintained in accordance with the Vermont Agency of Transportation Standard Specifications Sections 654 and 755.07.

3.04 RESTORATION

- A. As soon as construction is completed in a given area, it shall be topsoiled, seeded, fertilized and mulched.

3.05 GRASS-LINED DITCHES

- A. All ditches that are not stone-lined shall be topsoiled, seeded, fertilized and mulched. Any area which shows signs of erosion shall be reseeded immediately and maintained until permanent vegetation is established.

3.06 TEMPORARY DIVERSION DITCH

- A. Stabilize any diversion berms or flow channels with with seed and straw mulch or erosion control matting immediately after installation. Channels with slopes greater than 5% shall be lined with 4 inch stone. The diversion berm shall remain in place until disturbed areas are completely stabilized.

3.07 MAINTENANCE

- A. All erosion control measures shall be inspected weekly and repaired and/or replaced as needed.
- B. All erosion control measures shall be inspected after periods of heavy rain.
- C. The stabilized road entrance shall be top dressed with additional stone should the existing stone become clogged with sediment.
- D. Hay or straw mulch is subject to wind action. Mulch may require anchoring as the weather conditions warrant.

3.08 WINTER CONSTRUCTION

- A. If, due to the project schedule, construction during the winter months is necessary, the Contractor shall follow the winter construction procedures outlined in the "Low Risk Site Handbook for Soil Erosion and Sediment Control" as well as the following procedures:
 1. Minimize disturbance between October and May.
 2. All erosion control measures shall be in place prior to the ground freezing.
 3. For areas to be stabilized by vegetation, seeding shall be completed no later than september 15 to ensure adequate growth and cover.
 3. All non-vegetative stabilization must be completed by October 15.
 4. Where mulch is specified, apply roughly 3 inches with an 80-90% cover. Mulch should be trucked in or stabilized with netting in open areas vulnerable to wind.

TEMPORARY SEEDING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 1. Furnishing all labor, materials and equipment to complete all seeding required to provide temporary protection against wind or water erosion.

1.02 GENERAL NOTES

- A. Adequate seed bed preparation, use of quality seed, and timely planting are required to achieve a good stand of vegetation to control erosion. Within 48 hours of final grading, the exposed soil must be seeded and mulched or covered with erosion control matting.

PART 2 - PRODUCTS

2.01 GENERAL

- A. At a minimum, all products shall meet the requirements of Section 651 of the VADOT Standard Specifications for Construction.

PART 3 - EXECUTION

3.01 SEEDING CONDITIONS

- A. All essential grading and all temporary structures, such as diversions, dams, ditches, and drains needed to prevent gully and reduce siltation, should be completed prior to seeding.
- B. All areas of disturbance must have temporary or permanent stabilization within 7 days of initial disturbance. After this time, any disturbance in the area must be stabilized at the end of each work day.
- C. Stabilization is not required if earthwork is to continue in the area within the next 24 hours and there is no precipitation forecast for the next 24 hours.

3.02 SEED AND SEEDING

- A. Seed and seeding rates may be selected from the table below. The selection will be based on the time of year the seeding is to be made and the length of time the vegetation is to afford the protection. The seed should be spread uniformly over the area. After seeding, the soil should be firmed by rolling or packing. Where rolling or packing is not feasible, the seed should be covered lightly by raking, disking, or dragging.

- B. Plant Selection and Seeding Rates:

Species	Per Acre	Per 1000 Sq. Ft.	Remarks
Annual Ryegrass	40 lbs.	1 lb.	Grows quickly, but is of short duration. Use where appearances are important. Seed early spring and/or between August 15 and September 15. Cover the seed with no more than 0.25 inch of soil.
Perennial Ryegrass	30 lbs.	0.7 lbs.	Good cover which is longer lasting than annual ryegrass. Seed between April 1 and June 1 and/or between August 15 and September 15. Mulching will allow seeding throughout the growing season. Seed to a depth of approximately .5 inch.

3.04 MULCHING

- A. Where it is impracticable to incorporate fertilizer and seed into moist soil, the seeded area should be mulched to facilitate germination.

3.05 MAINTENANCE

- A. If the seeding fails to grow, it may need to be re-established to provide adequate erosion control.
- B. If weeds become a problem, they may need to be controlled by mowing.

SITE ENGINEER:



CIVIL ENGINEERING ASSOCIATES, INC.
10 MANSFIELD VIEW LANE, SOUTH BURLINGTON, VT 05403
802-864-2323 FAX: 802-864-2271 web: www.ces-vt.com

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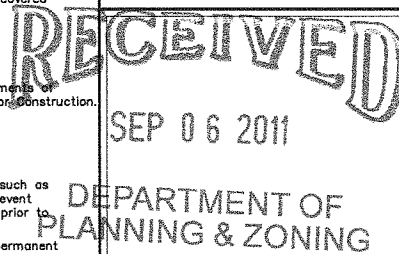
JAMES
MULLOWNEY

7 DRIFTWOOD
BURLINGTON
VERMONT

PROJECT:

PROPOSED
SLOPE
STABILIZATION

7 DRIFTWOOD LANE
BURLINGTON
VERMONT



DATE	CHECKED	REVISION

EROSION
CONTROL
DETAILS

DATE
JULY, 2011

SCALE
AS NOTED

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